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# SCIENTIFIC PUBLICATIONS

—OF—

ROBERT BELL, B.A.Sc., M.D., LL.D., F.R.S.C.

*Assistant Director of the Geological Survey.*

1857 - 1894

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*The* EDITH *and* LORNE PIERCE  
COLLECTION *of* CANADIANA



*Queen's University at Kingston*

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IN THE PUBLICATIONS OF THE GEOLOGICAL SURVEY OF CANADA,  
VIZ. :

1. The Natural History of the Lower St. Lawrence, the Saguenay and Lake St. John. Report for 1857.
2. Catalogue, with Notes, of Animals and Plants collected on the South-east side of the St. Lawrence from Quebec to Gaspé. Report for 1858.
3. Superficial Geology of Canada. General Report on the Geology of Canada, 1863, pp. 886-930.
4. Coloured Map, with Explanations showing the Distribution of the Superficial Deposits between Lake Superior and Gaspé. Atlas accompanying the last. 1863.
5. Geology of Grand Manitoulin Island. Report for 1863-66.
6. Geological and Topographical Map of a Portion of the Gaspé Peninsula, from Surveys by Dr. Bell, accompanying a Report on the Occurrence of Petroleum in that Region. Pamphlet published for the Geological Survey in Quebec, 1865.
7. Geology of the Western Portion of Grand Manitoulin, and of Cockburn, Drummond and St. Joseph's Islands. Report for 1866-69.
8. The North-west Coast of Lake Superior and the Nipigon District, with a Topographical Map of the Thunder Bay and Lake Nipigon Regions. Report for 1866-69.

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9. The Country North of Lake Superior, between the Nipigon and Michipicoten Rivers, Long Lake, etc. Report for 1870-71.
10. The Country between Lake Superior and the Albany River. Report for 1871-72.
11. The Country between Lake Superior and Lake Winnipeg. Report for 1872-73.
12. The Country between Red River and the South Saskatchewan, with Notes on the Geology of the Region between Lake Superior and Red River. Contains an Appendix, by Mr. Hoffmann, on Lignites. Report for 1873-74.
13. The Country West of Lakes Manitoba and Winnipegosis, with Notes on the Geology of Lake Winnipeg. Report for 1874-75.
14. Explorations in 1875 between James' Bay and Lakes Superior and Huron. Report for 1875-76.
15. In Part: Descriptive Catalogue of a Collection of the Economic Minerals of Canada at the Philadelphia International Exhibition, 1876. Special publication of the Geological Survey, 1876.
16. Geological Researches North of Lake Huron and East of Lake Superior. Report for 1876-77.
17. An Exploration of the East Coast of Hudson Bay in 1877, with a Map of the East-main Coast, 6 plates and 3 illustrations. Report for 1877-78.
18. Explorations in 1878 in the Country between Lake Winnipeg and Hudson Bay, with Map of Lake Winnipeg, Map of Nelson River, and the Boat Route between Lake Winnipeg and Hudson Bay, including an enlarged Plan of the Mouth of Hayes River and Vicinity of York Factory; also 5 Plates. Report for 1877-78.
19. Explorations in 1879 on the Churchill and Nelson Rivers and around God's and Island Lakes, with Maps of these lakes, 6 plates, and the following Appendices:—I. On some Silurian and Devonian Fossils from Manitoba and the Valleys of the Churchill and Nelson Rivers. J. F. Whiteaves. II. List of Plants collected by Dr. Bell around the Shores

of Hudson Bay and along the Churchill and Nelson Rivers. J. Macoun. III. List of Fresh Water Mollusca from Manitoba and the Valley of Nelson River. J. F. Whiteaves. IV. List of Lepidoptera from Nelson and Churchill Rivers and the West Coast of Hudson Bay. Herr Geffcken. V. List of Coleoptera collected by Dr. Bell in 1879 on the Nelson and Churchill Rivers. J. L. LeConte. VI. List of Birds from the Region between Norway House and Forts Churchill and York. R. Bell. VII. Variation of the Compass in 21 localities in the Regions explored. R. Bell. Report for 1878-79.

20. Hudson Bay and some of the Lakes and Rivers lying to the West of it ; also, Log of a Voyage in the "Ocean Nymph" from York Factory to London.

The Northern Limits of the Principal Forest Trees of Canada, East of the Rocky Mountains, with a Map on which they are shown.

This report also contains the following Appendices : I. List of Fossils collected by Dr. Bell in Manitoba in 1880. J. F. Whiteaves. II. Tabulated List of Plants collected by Dr. Bell west of Hudson Bay. J. Macoun. III. List of Coleoptera collected by Dr. Bell in 1880 in Manitoba and between Lake Winnipeg and Hudson Bay. J. L. LeConte. IV. List of the Land, Fresh-water and Marine Mollusca collected by Dr. Bell. J. F. Whiteaves. V. Analysis of the Waters of Hayes and Nelson Rivers. Professor William Dittmar, F.R.S. VI. Seasonal and Periodic Events at York Factory. Compiled by Dr. Bell. VII. Tables showing dates of the opening and closing of Hayes River at York Factory from Records by Mr. Wm. Woods, Meteorologist, York Factory. VIII. Dates of the Arrivals of the Vessels of the Hudson's Bay Company at York Factory and of their Sailings for 93 years from 1789 to 1880, both inclusive. IX. Seasonal and Periodic Events at Moose Factory. X. Dates of the Arrivals of the Vessels of the Hudson's Bay Company at Moose Factory and of their Sailings for 147 years, from 1735 to 1880,



both inclusive. XI. Statistics of the weather from observations taken at York and Moose Factories. Report for 1879-80.

21. Geology of the Basin of Moose River and adjacent Country. With a Geological Map. Report for 1880-81-82.
22. Geology of Lake of the Woods and Adjacent Country. With a Geological Map. Report for 1880-81-82.
23. On Part of the Basin of Athabasca River. With a Map of the River from Lac La Biche to Lake Athabasca, one Plate and an Appendix containing a list of Lepidoptera collected by Dr. Bell in the Northwest Territory in 1882. Report for 1882-83-84.
24. Observations on the Coast of Labrador and on Hudson Strait and Bay made in 1884. With 2 steel-plate engravings and the following Appendices: I. List of Plants collected by Dr. Bell in Eastern Labrador and on Hudson Strait and Bay. J. Macoun. II. List of Mammals with Notes. Dr. Bell. III. List of Birds with Notes. Dr. Bell. List of Crustacea collected by Dr. Bell at Port Burwell. S. J. Smith. V. List of Lepidoptera collected by Dr. Bell in Hudson Strait. H. H. Lyman. VI. List of Coleoptera from Fort Churchill. Report for 1882-83-84.
25. Observations on the Geology, Zoology and Botany of Hudson Strait and Bay made in 1885 with a Map of the Ottawa Islands, 2 steel-plate engravings, 2 illustrations and the following Appendices: I. Lists of Plants collected in Newfoundland and Hudson Strait. J. Macoun. II. Partial List of Insects collected on the Expedition. H. H. Lyman and G. H. Horn. Report for 1885, DD.
26. Explorations of the Attawapishkat and Albany Rivers, Lonely Lake to James Bay. With 4 plates and an Appendix containing a List of Lepidoptera from the southern part of Keewatin District by H. H. Lyman. Report for 1886.
27. Geology of the Sudbury Mining District. With a detailed Geological and Topographical Map, 4 plates, 8 figures and the following Appendices: I. Notes on the Microscopical

Characters of 50 kinds of Rocks, mostly from the Sudbury District, Professor Geo. H. Williams, of Johns Hopkins University. II. Levels of the Lakes of the District above the sea. List of Elevations on the Canadian Pacific Railway. III. Report with List of 73 Species of Lepidoptera collected by Dr. Bell in the country northward of Lake Huron, by H. H. Lyman, of Montreal, Wm. H. Edwards, Professor J. B. Smith, of New Jersey, and Revd. Geo. D. Hulst, of Brooklyn. IV. Meanings of Indian Geographical Names in the country around Sudbury. Dr. Bell. Report for 1890-91, Part I.

- 28-50. Contributions to 23 Summary Reports from 1870 to 1893 published in the Annual Reports of the Department of the Interior and reprinted in those of the Geological Survey.

IN THE TRANSACTIONS OF THE ROYAL SOCIETY OF CANADA, VIZ :

51. Notes on the Birds of Hudson Bay. Vol. I. Sect. 4, 1882.
52. Causes of the Fertility of the Land in the Canadian Northwest. Vol. 1, Sect. 4, 1883.
53. The Geology and Economic Minerals of Hudson Bay and Northern Canada. Vol. II., Sect. 4., 1884.
54. On some Points in reference to Ice Phenomena. Vol. IV. Sect. 3, 1886.
55. The Petroleum Field of Ontario. Vol. V, Sect. 4, 1887.
56. The Chickaree or Red Squirrel. An Appendix to Dr. T. Wesley Mills' Paper on Squirrels. Vol. V., Sect. 4, 1887.
57. The Huronian System in Canada: Presidential Address to Sect. 4. Vol. V., Sect. 4, 1888.
58. Glacial Kettle-Holes in Canada. Vol. XII. Sect. 4, 1894. (In press.)

IN THE BULLETINS OF THE GEOLOGICAL SOCIETY OF AMERICA.

59. On Glacial Phenomena in Canada. Vol. I., pp. 237-310. April 1890.

60. The Nickel and Copper Deposits of Sudbury District, Canada. With an Appendix on the Silicified Glass-Breccia of the District by Prof. Geo. H. Williams of Johns Hopkins University. Vol. II. pp. 125-140, February, 1891.
61. Discussion of the the Supposed Post-Glacial Outlet of the Great Lakes through Lake Nipissing and the Mattawa River. Vol. IV. pp. 425-6-7. Proceedings of the Ottawa Meeting, December, 1892.
62. Pre-Palæozoic Decay of Crystalline Rocks north of Lake Huron. With 2 plates and 3 figures. Vol. V. pp. 357-366, March, 1894.
63. The Honeycombed Limestones in the Bottom of Lake Huron. Illustrated by photogravures. Read at the Baltimore Meeting, December, 1894. (In press.)

IN THE CANADIAN NATURALIST AND GEOLOGIST AND (ITS SUCCESSOR) THE CANADIAN RECORD OF SCIENCE, MONTREAL, VIZ.:

64. The Natural History of the Gulf of St. Lawrence and the Distribution of the Mollusca in Eastern Canada. Vol. IV., 1859, pp. 241-251.
65. On the Occurrence of Fresh-water Shells in some of our Post-Tertiary Deposits. Vol. VI., 1861, pp. 42-51.
66. List (with Notes) of Recent Land and Fresh-water Shells, collected around Lakes Superior and Huron in 1859-60. Vol. VI. 1861, pp. 268-270.
67. Catalogue (with Notes) of Birds collected and observed around Lakes Superior and Huron in 1860. Vol. VI. 1861, pp. 270-275.
68. Superficial Geology of the Gaspé Peninsula. Vol. VIII., 1863, pp. 175-183.
69. Roofing Slate as a Source of Wealth in Canada. Vol. VIII., 1863, pp. 358-369.
70. The Nipigon Territory. Ser. II., Vol. 5, 1870, pp. 118-120.



71. Mineral Region of Lake Superior. Ser. II., Vol. 7, 1875, pp. 49-51. (Epitomized by J. F. Whiteaves.)
72. The Forests of Canada, with Map. Can. Record of Science, Vol. II., April, 1866, pp. 65-77.
73. Biography of the late Alexander Murray, Geologist, with Portrait. Ibid, April, 1892, pp. 77-96.

IN THE CANADIAN JOURNAL AND (ITS SUCCESSOR) THE PROCEEDINGS  
OF THE CANADIAN INSTITUTE, TORONTO, VIZ :

74. Sketch of the Geology of the Route of the Intercolonial Railway. Can. Jl. Ser. II. Vol. 15. 1878, pp. 381-387.
75. On the Occurrence of Petroleum in the North-west Territories with Notes on New Localities. Proc. Can. Inst. Ser. III. Vol. I., 1879-83, pp. 225-230.
76. The Mode of Occurrence of Apatite in Canada. Ibid. Ser. III. Vol. 3, 1884-85. pp. 294-302. (A Paper by Dr. Bell on the same subject is published in the Engineering and Mining Journal, Vol. 39., p. 316, May 9th, 1885.)
77. Marble Island and the North-west Coast of Hudson Bay. Ibid. Ser. III. Vol. 4, 1885-86, pp. 192-204.

IN THE ANNALS OF THE BOTANICAL SOCIETY OF CANADA, VIZ. :

78. Catalogue of Plants collected on the South and East Shores of Lake Superior and on the North Shore of Lake Huron. Kingston, 1861.
79. The Trees and Shrubs growing around Lakes Superior and Huron. Kingston, 1861.

MISCELLANEOUS PUBLICATIONS.

- 80-94. Annual Reviews of the Progress of Mining in Canada from 1863 to 1877, published in the Monetary Times, Montreal; Engineering and Mining Journal, New York; Mining Journal, London, and Reports on the Trade and Commerce of Montreal.

95. The Enniskillen Oil Region. London, England, 1865.
96. On the Occurrence of Petroleum in Gaspé. New York, C. S. Westcott & Co. 1865.
97. Lake Superior, Chambers' Encyclopædia, Edinburgh, Vol. IX. 1867.
98. The Oil Regions of Gaspé. New York, John A. Gray and Green. 1865.
99. On the Modes of Occurrence of Plumbago in Grenville. New York. 1866.
100. Report on a Railway Route North of Lake Superior; transmitted to the Dominion Government 22nd February, 1870. Reports of Surveys of the Pacific Railway.
101. The Rochon Micrometer Telescope as a Surveying Instrument. Engineering News, Chicago, 1872.
102. Sketch of the Geology of the Provinces of Ontario and Quebec. Walling's Atlas and Gazetteer of Canada, 1875.
103. Provisional Report on the Country between Lake Winnipeg and Hudson Bay with reference to the proposed Opening of Communication between York Factory and the Northwest Territory. Report of the Department of the Interior for 1877-78. Special Appendix A.
104. Recent Explorations around Hudson Bay. Transactions of the Geographical Society of Quebec. Vol. I., No. 1. 1880.
105. A New Route to Europe from the Interior of our Northwest Territories. Montreal, 1881.
106. The Commercial Importance of Hudson Bay. Proceedings of the Royal Geographical Society, York Meeting, 1881.
107. Description of the Country between Hudson Bay and the Red and Saskatchewan Rivers. Picturesque Canada, 1882.
108. Return to an Order of the House of Commons of Canada, dated 21st February, 1883, for Information as to Hudson Bay. Commons Sessional Papers, 1883.
109. A Plea for Pioneers. Proceedings of the Association of Dominion Land Surveyors, 1885.
110. Government Map-Making. Proceedings of the Association of Dominion Land Surveyors, 1886.

111. The Medicine Man. *Canada Medical and Surgical Journal*, March and April, 1886.
112. The Mineral Resources of the Hudson Bay Territories. Transactions of the American Institute of Mining Engineers, Pittsburg Meeting, February, 1886.
113. Notes and Maps in Report of a Select Committee of the Senate on the Great Mackenzie Basin, 1888.
- 114-120. Seven (7) Annual Reviews of the Progress of Science in Canada from 1878 to 1886. *Dominion Annual Register*
121. Report on the Labrador Coast and Hudson Strait and Bay. Report of the Department of Marine and Fisheries. "Nep-tune" Expedition, 1884.
122. Report on the Geology of Hudson Bay and Strait. Report of Department of Marine and Fisheries, "Alert" Expedition, 1885.
123. Report on the Third Hudson Bay Expedition. Report of Department of Marine and Fisheries, 1886.
124. Forest Fires in Northern Canada. Report of American Forestry Congress, Atlanta Meeting; read 6th December, 1888.
125. Sir William Logan and Our Geological Survey. *New Dominion Monthly*. Montreal. February, 1870.
126. The Origin of Gneiss and of some other Primitive Rocks. Proceedings of the American Association for the Advancement of Science, Toronto Meeting, 1889.
127. In part: Report of the Royal Commission on the Mineral Resources of Ontario, 1890. *Geology of Ontario with Special Reference to Economic Minerals*. Glossary of Geological and Mining Terms, etc.
128. The Laurentian and Huronian Systems North of Lake Huron, with Map. Report of the Bureau of Mines, Ontario, 1891, pp. 63-94.
129. The Contact of the Laurentian and Huronian North of Lake Huron. Abstract of a Paper read before the Geological Society of America at the Ottawa Meeting, December 1892. *The American Geologist*, Vol. XI., No. 2, February 1893, pp. 135-136.

LIST OF PUBLIC LECTURES AND ADDRESSES AND PAPERS READ  
BEFORE SCIENTIFIC SOCIETIES, BY DR. R. BELL, OF WHICH  
ONLY ABSTRACTS OR REPORTS HAVE BEEN PUBLISHED.

130. Lectures as a Method of Instruction in University Education : Introductory Address as Professor of Chemistry and the Natural Sciences at the Opening of the Session of 1864-65, delivered in Convocation Hall, Queen's University, Kingston.
131. Certain Chemical Manufactures which might be advantageously established in Canada. Fifth Somerville Lecture, Montreal, 23rd March, 1865.
- 132-137. Household Chemistry : Six Popular Lectures delivered in Kingston, February and March, 1867.
138. The Geological Relations of Gold : A Paper read before the Philosophical Society of Kingston, 15th March, 1867.
139. Grand Manitoulin Island : A Lecture in Convocation Hall, Queen's University, Kingston, April, 1867.
140. Canada : Its Resources and People. A Lecture under the auspices of His Excellency the Governor-General of Newfoundland, the Legislature, and the St. John's Athenæum, St. John's, 1st February, 1869.
141. The Indians of Canada. A Lecture before the St. Gabriel's Young Men's Association, Montreal, 10th January, 1870.
142. The Intelligence of Animals. A Paper read before the Natural History Society of Montreal, 31st January, 1870.
143. Explorations in the Nipigon Country. First Somerville Lecture, Montreal, 10th February, 1870.
144. Notes on the Natural History of the Nipigon Country. A Paper read before the Natural History Society of Montreal, 28th February, 1870.
145. The Region North of Lake Superior and the proposed Pacific Railway. A Lecture before the Mechanics' Institute, Toronto, 17th June, 1870.
146. The Various Species of Deer inhabiting the Dominion. A Paper read before the Natural History Society of Montreal, 19th December, 1870.

147. The Wonders of the Glacial Period. Fourth Somerville Lecture, Montreal, 23rd February, 1871.
148. The Coal Fields of Canada. A Lecture under the auspices of the Grand Trunk Reading Room Association, Point St. Charles, 19th February, 1873.
149. The Haronian and other Mineral-bearing Rocks of Lake Superior. A Paper read before the Natural History Society of Montreal, 24th February, 1873.
150. The Fur-bearing Animals of Canada. Fifth Somerville Lecture, Montreal, 27th February, 1873.
151. A Journey from Montreal to the Saskatchewan in 1873. A Lecture before the St. Gabriel's Young Men's Association, 24th February, 1874.
152. Coal. A Lecture delivered in the Mechanics' Hall, Montreal, on behalf of the Working Men's Mutual Benefit and Widows' and Orphans' Provident Society. March, 1873.
153. A Summer on the Plains. Third Somerville Lecture, Montreal, 19th February, 1874. Also delivered before the St. Andrew's Church Institute, Ottawa, 8th April, 1890.
154. The Grasshopper Plague in the North-west Territory. Third Somerville Lecture, Montreal, 25th March, 1875.
155. The Uses of a Geological Survey. A Lecture delivered at Prince Arthur's Landing, October, 1875.
156. Our Great North-west as a Home for the Emigrant. Second Somerville Lecture, Montreal, 13th February, 1879.
157. The Glacial Epoch in Canada. A Lecture before the Ottawa Literary and Scientific Society, 20th January, 1881.
158. Scientific Work in Canada. An address at Queen's University on receiving the Degree of LL.D., 25th April, 1883.
159. The Athabasca-McKenzie Basin. Fifth Somerville Lecture, Montreal, 1st March, 1883.
160. Notes on Diseases among the Indians. A Paper read before the Bathurst and Rideau Medical Association, Ottawa, January, 1885.



161. Explorations in Canada by Forest, Sea and Plain. A Lecture before the St. Paul's Young Men's Association, Montreal, 14th December, 1885.
162. Personal Reminiscences of the late Sir William Logan. A Lecture delivered in St. James' Hall, Ottawa, 10th March, 1885; also Somerville Lecture, Montreal, 26th March, 1885.
163. Hudson Bay. A Lecture before the Young Men's Christian Association of Ottawa, 16th March, 1886.
164. The Hudson Bay Territories and their Inhabitants. A Lecture before the Ottawa Literary and Scientific Society, 7th January, 1886.
165. Hudson Bay and the Hudson Bay Route. The Queen's University Lecture of 1886. Delivered in Convocation Hall, Kingston, 26th April, 1886.
166. Illustrations of Our Northern Wilderness. A Lecture delivered in St. George's Church School Room, Ottawa, 7th March, 1888.
167. North American Furs. A Lecture delivered in St. Bartholemew's Hall, Ottawa, 4th April, 1889, under the auspices of His Excellency the Governor-General.
168. The Glacial Succession in Canada. A Paper read before the World's Congress of Geologists, Chicago, August, 1893.
169. The Origin of Some Geographical Features in Canada. Read before Section IV., Royal Society of Canada, Ottawa, 24th May, 1888.
170. Some Ojibwé Legends. Read before the Montreal Branch of the American Folk-lore Society, April, 1893.
171. Our Forests. An Illustrated Lecture delivered, under the auspices of Their Excellencies The Governor-General and The Countess of Aberdeen, at Rideau Hall, 29th March, 1894.



